Optimized Purchase Order Building for the Retail Grocery Industry

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Abstract
The retail grocery industry is highly dynamic, as it deals with a wide variety of products that have varying shelf lives, ranging from just a day to several years. In addition, the industry faces challenges such as fluctuating customer demand, seasonal trends, and external factors like weather, logistics, imported materials, and currency fluctuations. On top of this, there are costs associated with holding inventory in warehouses, which add to the complexity.
In today's fast-paced world, the retail grocery sector needs a system that allows for real-time buying decisions. This means having access to up-to-the-minute data from various factors that influence inventory levels and prices. The goal is to maintain optimal inventory at the best prices while ensuring continued profitability and a positive customer experience.

Keywords: **Artificial Intelligence, Grocery, Retail, Orders, inventory, SAP, HANA DB.**

INTRODUCTION

Over the years the buying process in retail grocery industry has been heavily relied on manual buyers' judgment and with limited data and visibility of actual requirements, inventory count, demand, on stock, on orders. These key data points were not available in a single system and scattered over places and mostly on manual paper and receipt. Increasing adaptation digital software systems and keep data electronically provides significant input to apply the rules and algorithms to analyze past and current data to come up with trends that helps user making accurate decisions. Given the complexities involved, there is a clear need for an optimized buying system. Such a system would provide real-time information on crucial data, helping retailers make informed, data-driven decisions. By doing so, it ensures the right products are purchased in the right quantities at the right time, maximizing both efficiency and profitability.

PROPOSED SOLUTION

Active Order real time data

The customized SAP system provides real-time purchase order load building across multiple units of measure. Powered by HANA DB, it processes and displays purchase order load information dynamically, accommodating various units of measure—including custom ones—with every adjustment to quantities or materials. This real-time, multidimensional data empowers buyers to optimize orders by ensuring accurate material quantities, reducing instances of overordering or underordering, and maintaining optimized warehouse inventory levels.

Real-Time Vendor Restriction Validations

In addition to Active Order capabilities, the system validates vendor restrictions in real time. It alerts buyers if a purchase order exceeds or falls below vendor thresholds.
These insights allow buyers to fine-tune purchase orders before submission, ensuring precise quantities and minimizing variances in goods receipts and invoice reconciliations. By streamlining this process, the system reduces manual efforts and enables automated vendor payments within defined tolerances.

Real-Time Days-of-Supply Calculation

The system calculates the days of supply at the line-item level in real time, factoring in stock on hand, existing orders, and forecasts. This provides buyers with valuable insights into how much to order while considering other items in the purchase order. This feature is particularly helpful when optimizing overall purchase order loads for preferred vendors, enabling informed decision-making.

Order Splitting Based on Business Rules

A highly efficient feature is the ability to split orders based on various business rules, such as load limits, warehouse allocation, manual inputs, or connected vendor groupings. Buyers can create a single purchase order exceeding limits and then split it with a single click into multiple POs based on these criteria. This saves significant time by allowing buyers to manage adjustments and optimizations across multiple POs, all of which are updated in real time.

Unified Dashboard Experience

All these powerful functions—real-time data, validations, and order adjustments—are consolidated into a single, intuitive screen with no need to navigate elsewhere. This streamlined dashboard acts as both a decision-making tool and a transactional interface, enabling buyers to manage orders and create data seamlessly.

CONCLUSION

The proposed solution offers a robust, real-time SAP system powered by HANA DB, enabling dynamic purchase order management across various units of measure. It provides buyers with real-time insights, such as vendor restriction validations and days-of-supply calculations, which optimize order accuracy and streamline procurement processes. The system's ability to split orders based on business rules and adjust quantities dynamically ensures efficient management of complex purchasing scenarios. A unified dashboard consolidates these powerful features, providing buyers with a seamless interface for decision-making and transactions. This comprehensive approach reduces manual efforts, minimizes errors, and enhances overall efficiency in inventory and order management.